

REMARKS

This responds to the Office Action dated April 24, 2007. Claims 8, 16, and 20 are amended. No claims are cancelled or added. As a result, claims 1-4, 6-14, and 16-22 remain pending in this patent application.

Allowable Subject Matter

Applicant gratefully acknowledges the allowance of claims 1-4, 6, 7 and 11-14.

§102 Rejection of the Claims

Claims 8-10 and 16-18 were rejected under 35 U.S.C. § 102(b) as being anticipated by Hill et al. (U.S. Patent No. 5,403,356). Applicant has amended claims 8 and 16 (in a manner similar to the claims indicated as allowed) to overcome this rejection.

Applicant respectfully submits that nothing in Hill discloses delivering first and second pulses to different locations of a target atrium during the same atrial contraction but wherein the second pulse is offset from the first pulse by a duration that is timed to suppress circus conduction in the target atrium to inhibit atrial fibrillation without causing contraction of the target atrium. The Office Action states:

Regarding claim 18, Figure 5 [of Hill] appears to show that pulses 204 and 206 are not exactly concurrent in time, and thus are considered to be delivered sequentially, with 204 delivered slightly before 206.

(Office Action ¶ 6.) However, Applicant respectfully notes that FIG. 5 of Hill merely discloses a block 420 that reads “PACE BOTH” without any disclosure, teaching, or even a suggestion of pacing that is not simultaneous. In fact, the language “PACE BOTH” on the single block 420 at least seems to imply simultaneous pacing, which would actually teach away from the present claims. This is entirely consistent with FIG. 3 of Hill which shows paces 204 and 206 being vertically aligned against time. In a related passage, Hill also states:

In addition, in response to sensing of an atrial depolarizations by one of the electrode pairs, pacing pulses are delivered either to the other electrode pair or to both electrode pairs. The pacing pulses may be delivered essentially simultaneously with the detection of the atrial depolarizations, or may be delivered following a short delay period, e.g., less than 50 ms.

(Hill at col. 2, lines 23-31.) Although this cited passage of Hill allows for the atrial pulses to be delayed with respect to the atrial depolarization, Applicant respectfully submits that it does not disclose, teach, or even suggest offsetting the pulses in time with respect to each other during the same atrial contraction.

In sum, because Hill apparently does not disclose all elements recited or incorporated in claims 8-10 and 16-18, Applicant respectfully submits that no *prima facie* case of anticipation presently exists with respect to such claims. For brevity, Applicant defers but reserves the right to present further remarks with respect to the dependent claims, which are believed separately patentable.

As a further note, Applicant respectfully submits that because the amendments to claims 8-10 and 16-18 merely bring such claims in conformance with already allowed claims, no further search or consideration is believed needed for entry of these claim amendments.

§103 Rejection of the Claims

1. Claim 19 was rejected under 35 U.S.C. § 103(a) for obviousness over Hill et al. (U.S. Patent No. 5,403,356) in view of Schloss et al. (U.S. Patent No. 6,292,694). Applicant respectfully traverses this rejection on the grounds that no *prima facie* case of obviousness presently exists with respect to claim 19 because all elements recited or incorporated in claim 19 are not present in Hill and/or Schloss, for the reasons discussed above with respect to the § 102 rejection.

With respect to the addition of Schloss for its disclosure of atrial overdrive pacing, Applicant respectfully submits that Schloss fails to cure the deficiencies of Hill because one of ordinary skill in the art would understand that in atrial overdrive pacing, a second pulse would be timed with respect to the first pulse so as to “capture” the atrium, that is, to trigger a responsive atrial contraction—by first overdriving the atrial heart rate with antitachyarrhythmia pacing (ATP) and then slowing down the ATP rate, a tachyarrhythmia can be converted to a normal heart rhythm. By contrast, as discussed above, the claim 19 recites or incorporates a second pulse that is offset in time from the first pulse by a duration that is timed to suppress circus conduction in the target atrium to inhibit atrial fibrillation “without causing a separate contraction of the target atrium.” Therefore, Applicant respectfully submits that any disclosure

of atrial overdrive pacing actually teaches away from the present language recited or incorporated in claim 19.

In sum, because all elements presently recited or incorporated in claim 19 are apparently not disclosed, taught, or even suggested by Hill and/or Schloss, Applicant respectfully submits that no *prima facie* case of obviousness presently exists with respect to claim 19. Accordingly, Applicant respectfully requests withdrawal of this rejection of claim 19.

2. Claims 20-22 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Hill et al. (U.S. Patent No. 5,403,356) in view of Warman et al. (U.S. 2004/0088010). Applicant respectfully traverses this rejection on the grounds that no *prima facie* case of obviousness presently exists with respect to claims 20-22 because all elements recited or incorporated in claims 20-22 are not present in Hill and/or Warman, for the reasons discussed above with respect to the § 102 rejection and for the reasons discussed above with respect to the § 103 rejection based on Hill and Schloss.

With respect to the addition of Warman for its disclosure of atrial overdrive pacing, the Office Action cites the following portion of Warman:

When an AF episode occurs, the pacemaker or another medical device may apply therapy to terminate the AF episode. Therapy may comprise application of a shock or a drug. Another therapy for atrial tachycardia is overdrive pacing, in which the pacemaker paces one or both atria at a rate faster than their intrinsic rhythm. Overdrive pacing is often effective in disrupting circus arrhythmia and terminating an AF episode. An AF episode may also terminate spontaneously.

(Warman ¶ 4.) Rather than interrupting a circus conduction, as disclosed by Warman, claim 20 presently recites suppressing occurrence of a circus conduction. Moreover, claim 20 provides a second pulse that is timed to suppress occurrence of a circus conduction in a target atrium “without causing a separate contraction of the target atrium.” By contrast, as explained above with respect to the § 103 rejection using Hill and Schloss, atrial overdrive pacing operates quite differently—by first overdriving the atrial heart rate with antitachyarrhythmia pacing (ATP) and then slowing down the ATP rate, a tachyarrhythmia can be converted to a normal heart rhythm. Thus, in the atrial overdrive pacing of Warman, there would be no second pulse that is timed to suppress occurrence of a circus conduction in the target atrium without causing a separate contraction of the target atrium. Therefore, Applicant respectfully submits that any disclosure of

atrial overdrive pacing actually teaches away from the present language recited or incorporated in claims 20-22.

In sum, because all elements presently recited or incorporated in claims 20-22 are apparently not disclosed, taught, or even suggested by Hill and/or Warman, Applicant respectfully submits that no *prima facie* case of obviousness presently exists with respect to claims 20-22. Accordingly, Applicant respectfully requests withdrawal of this rejection of claims 20-22. For brevity, Applicant defers but reserves the right to present further remarks with respect to the dependent claims, which are believed separately patentable.

As a further note, Applicant respectfully submits that because the amendments to claims 20-22 merely bring such claims in conformance with already allowed claims, no further search or consideration is believed needed for entry of these claim amendments.

Reservation of Rights

In the interest of clarity and brevity, Applicant may not have equally addressed every assertion made in the Office Action, however, this does not constitute any admission or acquiescence. Applicant reserves all rights not exercised in connection with this response, such as the right to challenge or rebut any tacit or explicit characterization of any reference or of any of the present claims, the right to challenge or rebut any asserted factual or legal basis of any of the rejections, the right to swear behind any cited reference such as provided under 37 C.F.R. § 1.131 or otherwise, or the right to assert co-ownership of any cited reference. Applicant does not admit that any of the cited references or any other references of record are relevant to the present claims, or that they constitute prior art. To the extent that any rejection or assertion is based upon the Examiner's personal knowledge, rather than any objective evidence of record as manifested by a cited prior art reference, Applicant timely objects to such reliance on Official Notice, and reserves all rights to request that the Examiner provide a reference or affidavit in support of such assertion, as required by MPEP § 2144.03. Applicant reserves all rights to pursue any cancelled claims in a subsequent patent application claiming the benefit of priority of the present patent application, and to request rejoinder of any withdrawn claim, as required by MPEP § 821.04.

CONCLUSION

Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney (612) 373-6951 to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.


Respectfully submitted,

JAMES R. THACKER ET AL.

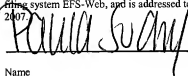
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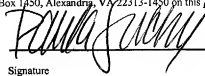
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Date June 21, 2007

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CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being filed using the USPTO's electronic filing system EFS-Web, and is addressed to: Commissioner of Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on this 21 day of June 2007.


Name


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